

Patent Claims

What is claimed is:

The vacuum

1. Vacuum cleaner blower (1) consisting of an electric drive motor (2) with a support cage (10) for receiving of the structural modules of the drive motor (2), such as stator pack (6), rotor (7) and brush holder (8) with carbon brushes (9) as well as an at least single stage blower unit driven by the motor and having a deflector (11), impeller (12) and suction hood (7), the deflector (11) being at the same time structured as a support cage cover with a bearing seat for the rotor (7), characterized by the fact *that*

the support cage (10) is structured for mounting its structural modules in a direction extending axially of the blower as well as for direct contacting, the brush holders 8 of the carbon brushes 9 being provided in the area of the upper side (B) of the support cage which also faces the deflector (11).

Ref. Drawing.

The vacuum

2. Vacuum cleaner blower of claim 1, characterized by the fact *wherein that at its side facing the deflector (11) the support cage (10) is provided with a rim extending beyond the cage, that the flared rim (16) is provided with receptacles (17;27) at least for the brush holders (8) of the carbon brushes (9) and formed into it and open upwardly and towards the interior of the support cage (10) (16).*

Ref.

The vacuum

25 3. Vacuum cleaner blower of claim 1 and 2, characterized by the fact *wherein that openings (18) in the flared rim (16) of the support cage (10) extend into the wall (19) of the cage (10) for receiving protruding stator pack connectors (20).*

The vacuum

30 4. Vacuum cleaner blower of one or more of claims 1 to 3,

Object

characterized by the fact
wherein
, that the stator pack connectors (20) are directly contacted by the
carbon brushes (9).

5 5. The vacuum
, Vacuum cleaner blower of one or more of claims 1 to 4,
characterized by the fact
wherein
, that the brush holders (8) of the carbon brushes (9) are provided with
brush holder connector pins (21) extending in the axial direction of the
support cage (10) which contact the associated stator pack connectors
10 (20) during placement of the carbon brushes (9) into the receptacles
(17).

6. The vacuum
, Vacuum cleaner blower of claim 1 and 2,
characterized by the fact
wherein
, that at least one further receptacle (27) is formed in the flared rim (16)
15 of the support cage (10) for receiving a plug-in component group
consisting of electrical components (28) for switching, control and/or
safety functions of the suction blower drive motor (2).

20 7. The vacuum
, Vacuum cleaner blower of one or more of claims 1 to 6,
characterized by the fact
wherein
, that the electrical components (28) are arranged on a circuit board (29)
25 insertable into the receptacle (27) and that during insertion of the
circuit board (29) the stator pack connectors (20) are connected with it
directly.

20 8. The vacuum
, Vacuum cleaner blower of one or more of claims 1 to 7,
characterized by the fact
wherein
, that the circuit board (29) is placed into an adaptor housing (31) which
30 may be separately into the receptacle (27).

9. *The vacuum*
1. Vacuum cleaner blower of ~~one or more of claims 1 to 8~~,
characterized by the fact
wherein
1. that the at its bottom side the receptacle (27) is provided with a socket
opening (32) penetrating through the wall (19) of the support cage (10)
for an external plug-in connection.

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10. *The vacuum*
1. Vacuum cleaner blower of ~~one or more of claims 1 to 9~~,
characterized by the fact that
wherein an
1. that the adaptor housing (31) with completed circuit board (29) or the
10 circuit board (29) itself is provided with connector pins (30a; 30b)
extending in the axial direction of the support cage (10) for direct
contacting with what.

11. *The vacuum*
1. Vacuum cleaner blower of ~~one or more of claims 1 to 10~~,
characterized by the fact
15 that the connector pins (30a) of the adaptor housing (31) or of the
circuit board 29 during insertion into the receptacle (27) contact
associated stator pack connectors (20) and that further connector pins
(30b) for external plug-in connection extend freely into the socket
opening (32).

20 *Assembly steps*
inserting
cleaning

12. *The vacuum*
1. Vacuum cleaner blower of ~~one or more of claims 1 to 11~~,
characterized by the fact
wherein
1. that the adaptor housing (31) may be inserted positively into the
25 receptacle (27).

13. *The vacuum*
1. Vacuum cleaner blower of ~~one or more of claims 1 to 12~~,
characterized by the fact
wherein
1. that the electrical components (28) on the circuit board (29) include a
30 decoupling capacitor and a thermal switch for the suction blower drive
motor (2).

The vacuum

14. ~~Vacuum cleaner blower of one or more of claims 1 to 13,~~
~~characterized by the fact~~
~~wherein~~
~~that a hold down bracket (33) for the stator pack (6) is formed on the~~
~~adaptor housing (31).~~

5

The vacuum

15. ~~Vacuum cleaner blower of one or more of claims 1 to 14,~~
~~characterized by the fact~~
~~wherein~~
~~that the adaptor housing (31) consists of a lower housing portion (31a)~~
~~for receiving the circuit board (29) and a lid portion (31b) linked to the~~
~~lower housing portion (31a).~~

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The vacuum

16. ~~Vacuum cleaner blower of one or more of claims 1 to 15,~~
~~characterized by the fact~~
~~wherein~~
~~that the lid portion (31b) is flexibly linked to the lower housing portion~~
~~(31a).~~

15

The vacuum

17. ~~Vacuum cleaner blower of one or more of claims 1 to 16,~~
~~characterized by the fact~~
~~wherein~~
~~that the deflector (11) is centrally affixed to the flared rim (16).~~

20

The vacuum

18. ~~Vacuum cleaner blower of one or more of claims 1 to 17,~~
~~characterized by the fact~~
~~wherein~~
~~that for the mutual alignment of support cage (10) and deflector (11)~~
~~one or more positively interfitting centering guides (22) are formed in~~
~~the flared rim (16) of the support cage (10) and in the marginal portion~~
~~at the lower side of the deflector (11).~~

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The vacuum

19. ~~Vacuum cleaner blower of one or more of claims 1 to 18,~~
~~characterized by the fact~~
~~wherein~~
~~that the centering guides (22) are formed as pins, profiled protrusions,~~
~~bores or the like.~~

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Assembly Step

The vacuum

20. Vacuum cleaner blower of ~~one or more of claims 1 to 19,~~ 18
characterized by the fact
wherein
that at the lower side of the deflector (11) the brush holder receptacles
(17) of the support cage (17) serve as centering counter pieces for the
centering guides (22).

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The vacuum

21. A vacuum cleaner blower of one or more of claims 1 to 20, characterized by the fact wherein that the centering guides (22) are formed as hold-down brackets for the brush holders (8). *desired result.*

10

formed as hold-down
domestic result.

The vacuum

22. ~~the vacuum cleaner blower of one or more of claims 1 to 21,~~
~~characterized by the fact~~
~~wherein~~ ^{guides}
~~that the centering~~ ^{pieces} as hold-down brackets are of U-shaped
configuration.

15

The vacuum

23. ~~Vacuum cleaner blower of one or more of claims 1 to 22,~~
characterized by the fact
wherein
~~1~~ that the wound stator pack (6) is positively secured in the support cage
(10).

20

The vacuum

24. ~~Vacuum cleaner blower of one or more of claims 1 to 23,~~
characterized by the fact
wherein
that the support cage (10) is formed with support braces (24) and/or
receptacles (25) positively complementing the contour of the stator, for
the stator pack (6).

25

The racuum

25. ~~Vacuum cleaner blower of one or more of claims 1 to 24, characterized by the fact wherein that the support cage (10) is formed with a support cage realizing suction air exits and for receiving a rotor bearing~~

30

wherein
that the support cage (10) is formed with a support cage bottom (15) realizing suction air exits and for receiving a rotor bearing.

izing suc-

desired
stage VI.

a

a

26. *The vacuum*
~~Vacuum cleaner blower of one or more of claims 1 to 25,~~
~~characterized by the fact~~
~~wherein~~
~~that at least the support cage (10) and the deflector (11) are made of a~~
~~non-metallic material, especially plastic.~~

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